

# **Virtual California**

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# Introduction

- **Problems with Current System**

- Data collections
- Image analysis software

## Development of CASDE Virtual Nebraska



**VIRTUAL NEBRASKA**

*The Gateway to "Digital Earth"*

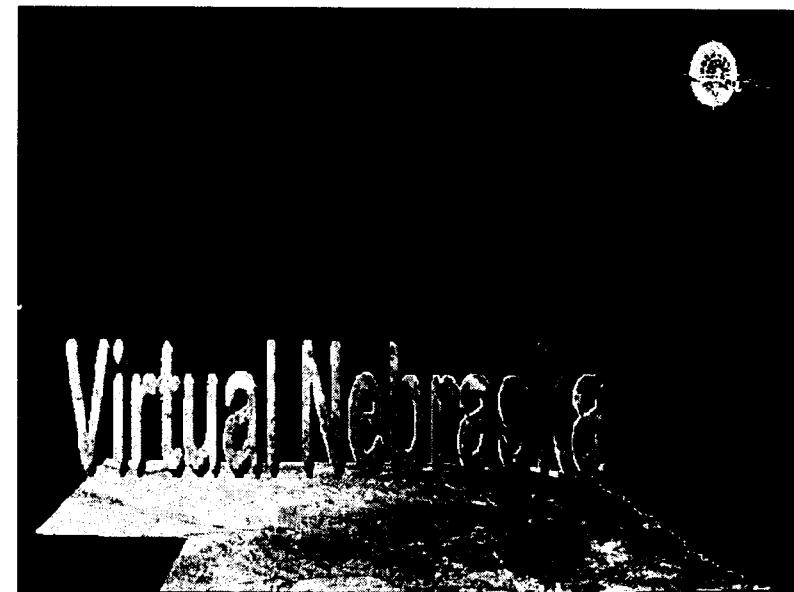
## Virtual California



# Virtual Nebraska

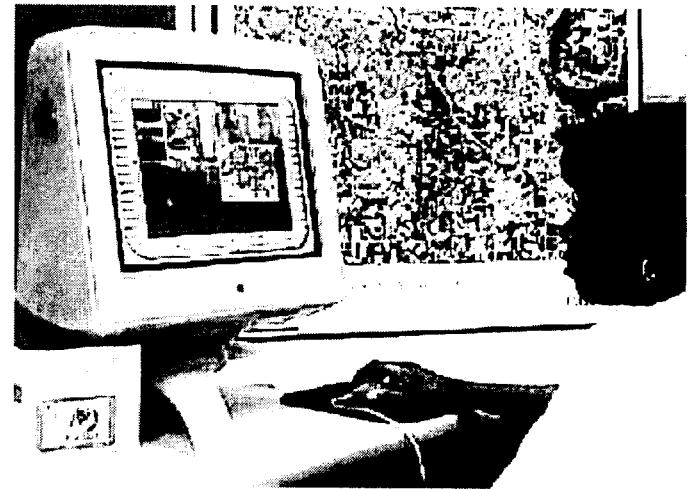
- Complete collection of aerial photos of major cities.
- Landsat data for counties.
- Historical photos.
- Remote sensing tutorials.

[www.casde.unl.edu/vn.html](http://www.casde.unl.edu/vn.html)

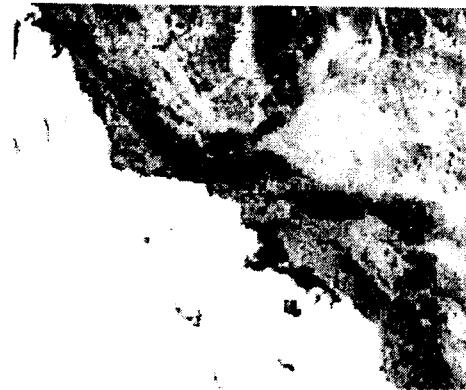


# Virtual California

- Provide teachers and students with high resolution images of their neighborhoods.
- Provides maps and elevation data to enhance interpretation of images.
- Provides a unified data storage architecture and modularity.



# Virtual California Dataset



## Low Resolution

1 km / pixel

This image is a color composite AVHRR of a portion of southern California. The red box indicates the same general area as that in the high resolution image of Glendale, California.



## Medium Resolution

100 - 30 m / pixel

This image is a color composite Landsat TM of a portion of southern California. The red box indicates the same general area as that in the high resolution image of Glendale, California.

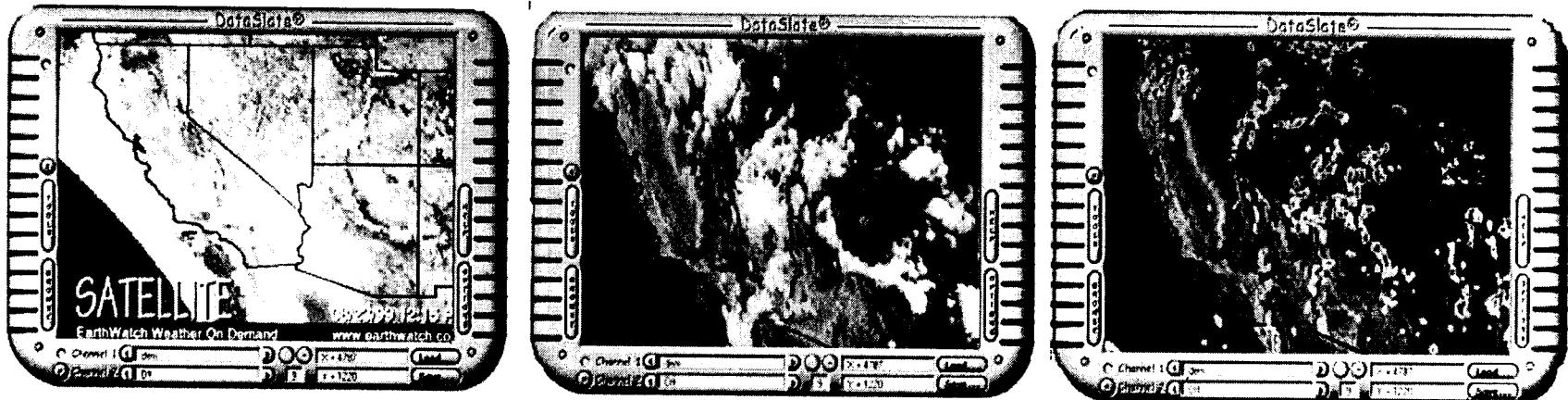


## High Resolution

10 - 1 m / pixel

This image is a Digital Orthographic Quarter Quadrangle of Glendale, California.

# Virtual California Datasets

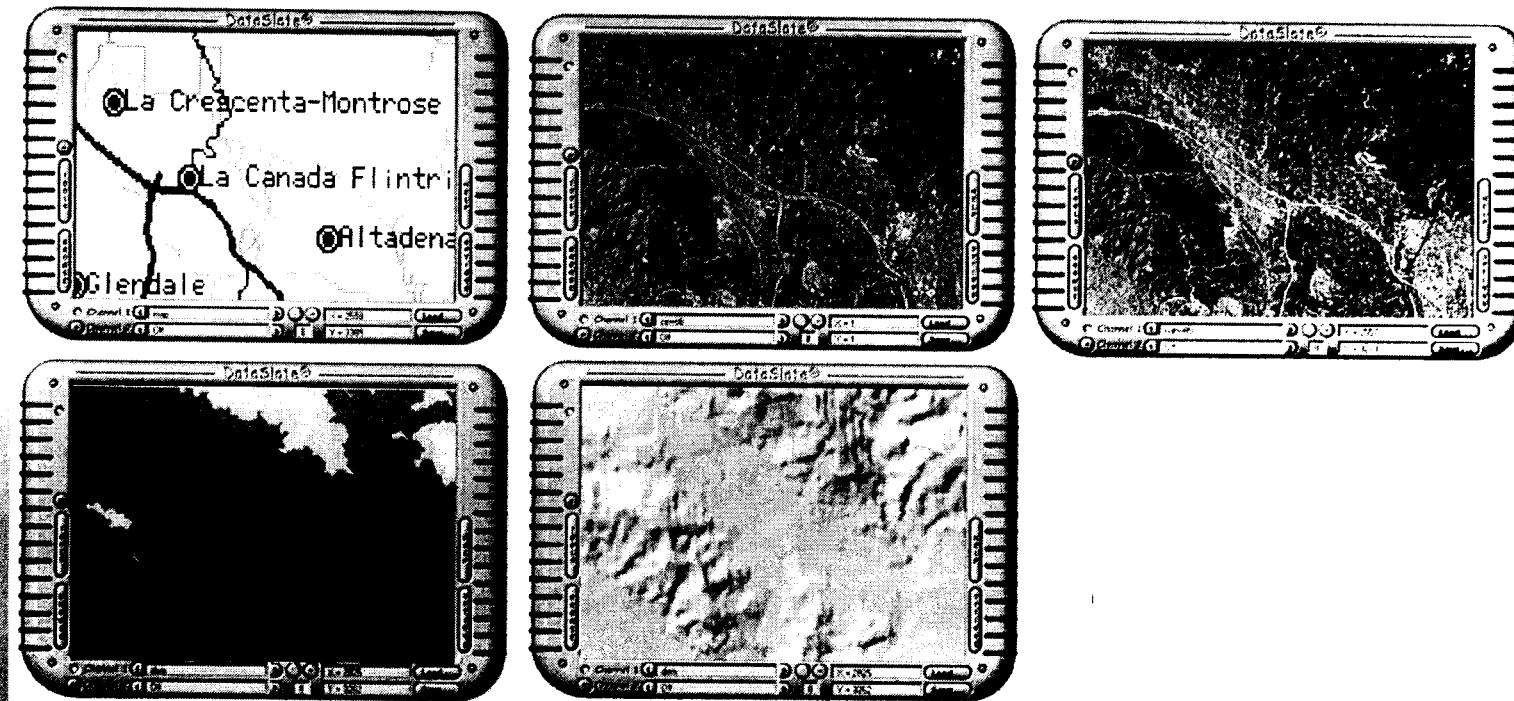


## Low Resolution Datasets:

AVHRR - Advanced Very High Resolution  
Radiometer

GOES - Geostationary Operational  
Environmental Satellite

# Virtual California Datasets



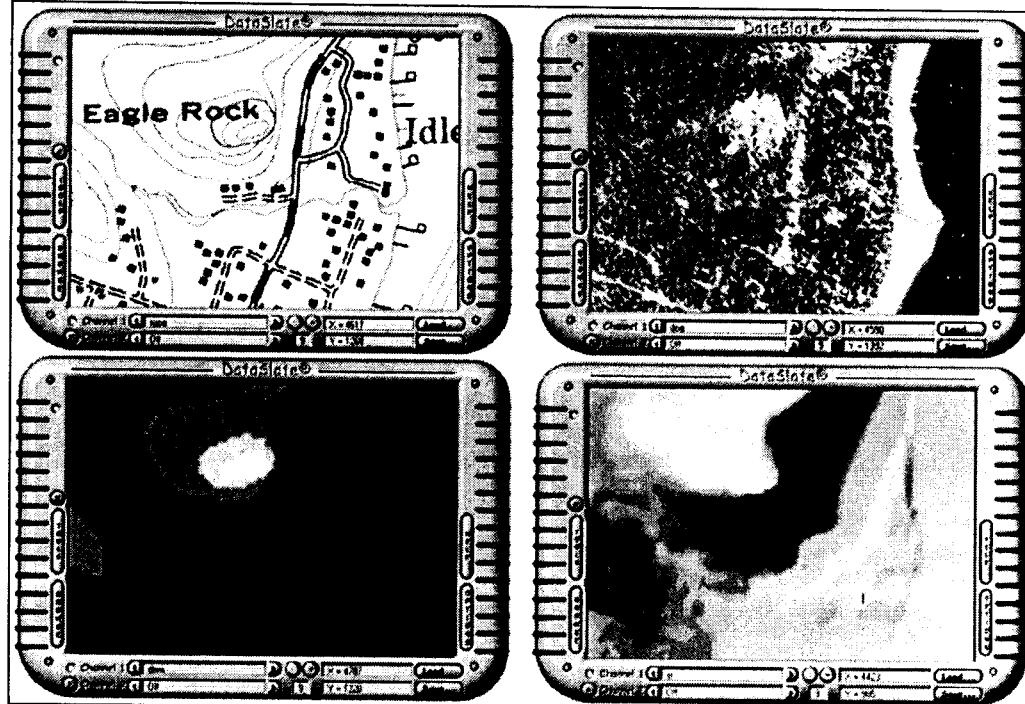
## High Resolution Datasets:

1:250000 Topographic Map

Landsat TM - Thematic Mapper CIR and True Color

30 m Digital Elevation Model and Shaded Relief

# Virtual California Dataset



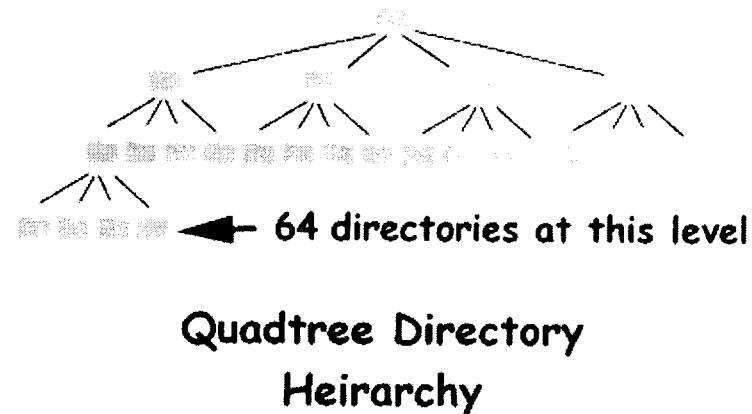
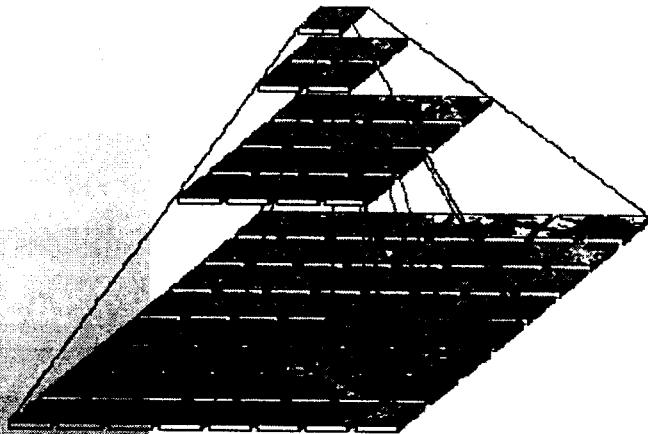
## High Resolution Datasets:

7.5' Digital Raster Graphics

DOQQ - Digital Orthographic Quarter Quadrangle

10 m Digital Elevation Model and Shaded Relief

# Virtual California Data



**stored in bins**

**Low Resolution - 16 x 16 degrees**

**Medium Resolution - 1 x 1 degree**

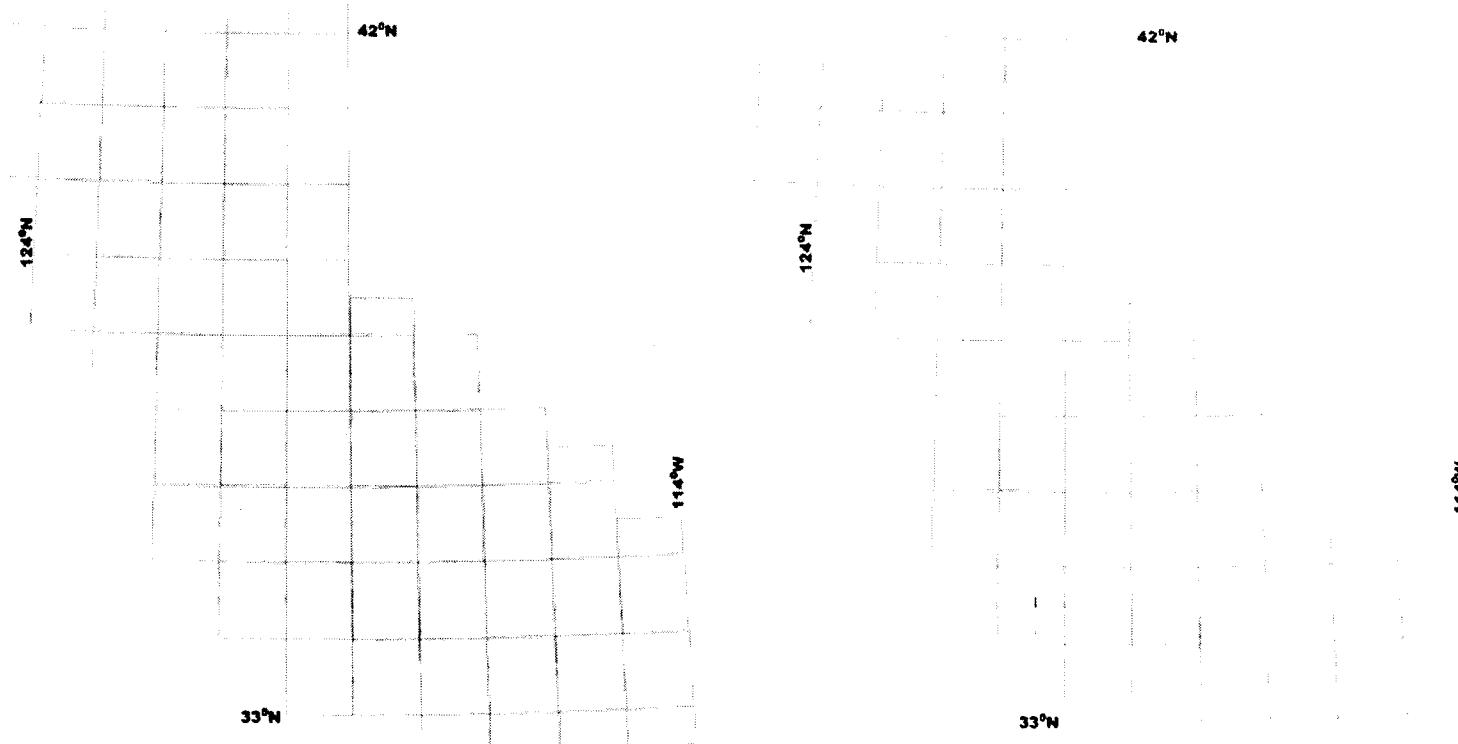
**High Resolution - 1/16 x 1/16th degree**

**stored in Equirectangular Projection**

# **Virtual California Goals**

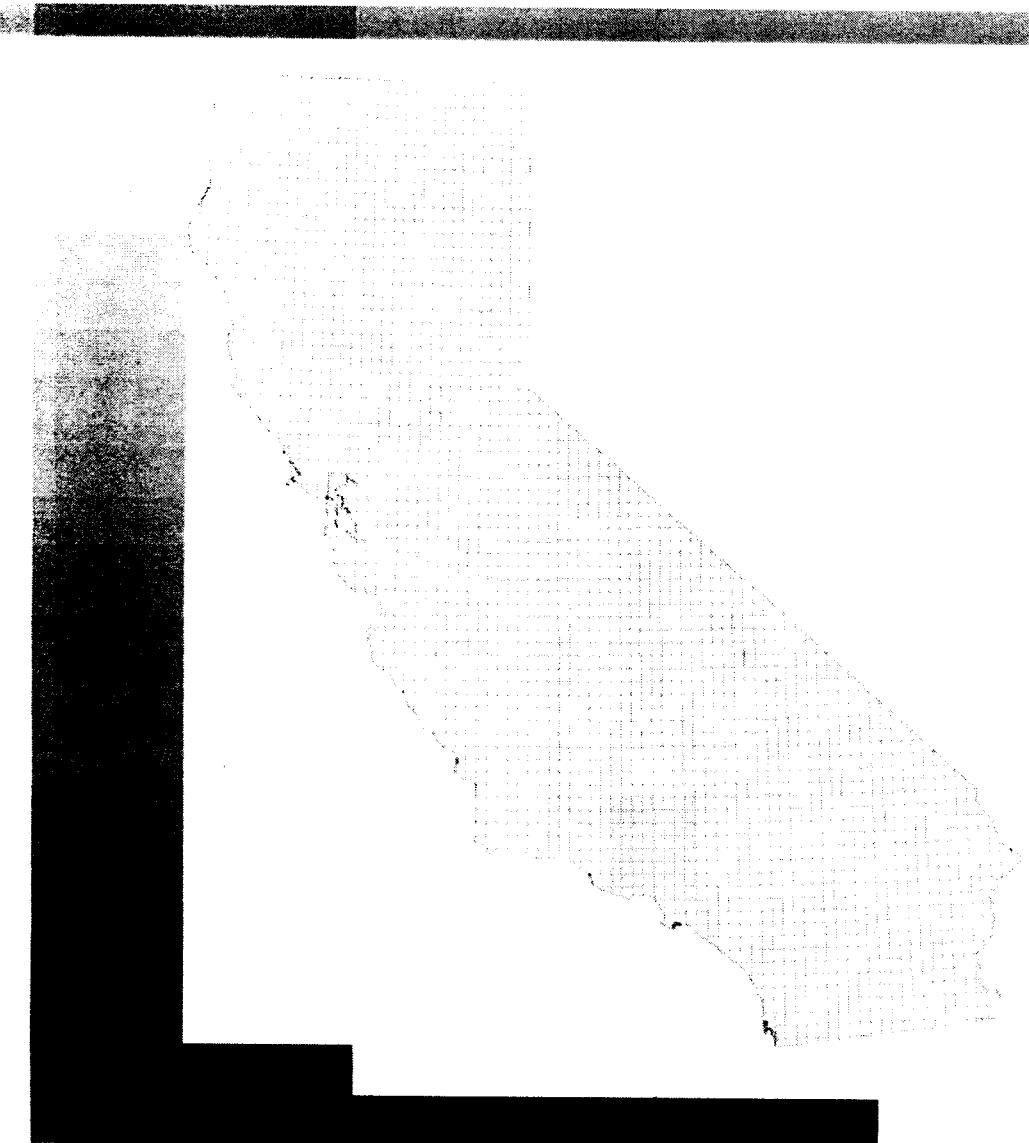
- Working to populate a prototype Virtual California
  - Provide entire state at low (AVHRR, GOES) and medium resolution (Landsat).
  - Provide one degree (N34W118, Los Angeles) at high resolution (64 topo maps, 256 digital ortho quads, 64 dem files).
- Develop a methodology and provide tools to be used in developing other virtual states.

# Virtual California Prototype



ent status of the medium resolution imagery for the type, including Landsat TM (left) and digital elevation 1 and shaded relief (right).

# Virtual California Prototype



Current status of the high resolution imagery for the prototype, including digital raster graphics, digital orthographic quarter quadrangles, digital elevation models and shaded relief.

# Virtual California Goals

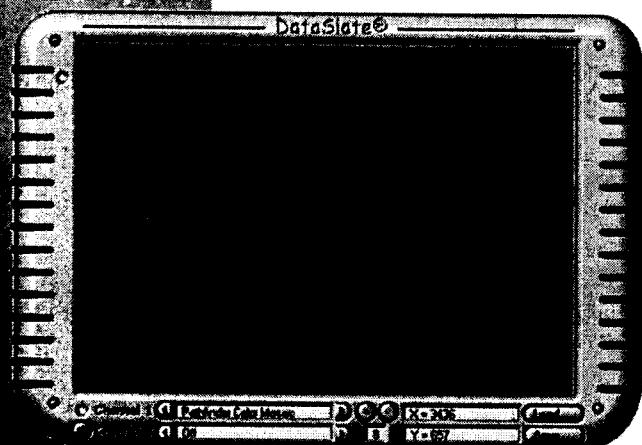
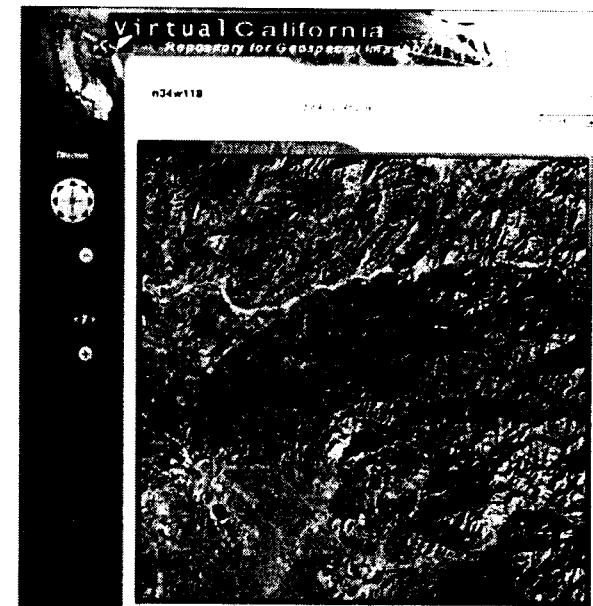
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# Virtual California Data

- **SimpleServer Web Browser**

- Text, geographic  
and / or graphical search
- Web Mapping

Testbed (WMT) compliant



- **Dataslate Client Viewer**
- Multi-channel viewing capability
- Analysis tools

# Virtual California State

- Medium Resolution for N34W118

- Estimated Process Times

- Landsat - .75 days
    - 30 m DEM / Shaded Relief - .20 days
    - 1:25000 Topographic Map - .05 days

- Estimated Finances

- Landsat - \$0 (from JPL)
    - 30 m DEM / Shaded Relief - \$0 ( from JPL)
    - 1:25000 Topographic Map - \$0 ( from USGS)

- Estimated File Sizes

- Landsat - 30 MBs

- 30 m DEM / Shaded Relief - 10 MBs

- 1:25000 Topographic Map - 25 MBs

# Virtual California Statewide

- **High Resolution for N34W118**

- **Estimated Process Times**

- 7.5 minute DRGs - .70 weeks
    - Digital Ortho Quarter Quads - 1.0 weeks
    - 10 m DEM / Shaded Relief - .30 days

- **Estimated Finances**

- 7.5 minute DRGs - \$10 (from Teale Data Center)
    - Digital Ortho Quarter Quads - \$2000 (from USGS)
    - 10 m DEM / Shaded Relief - \$60 (from USGS)

- **Estimated File Sizes**

- 7.5 minute DRGs - 512 MBs

- Digital Ortho Quarter Quads - 4.0 GBs

- 10 m DEM / Shaded Relief - 1.5 GBs